

# PATENT ABSTRACTS OF JAPAN

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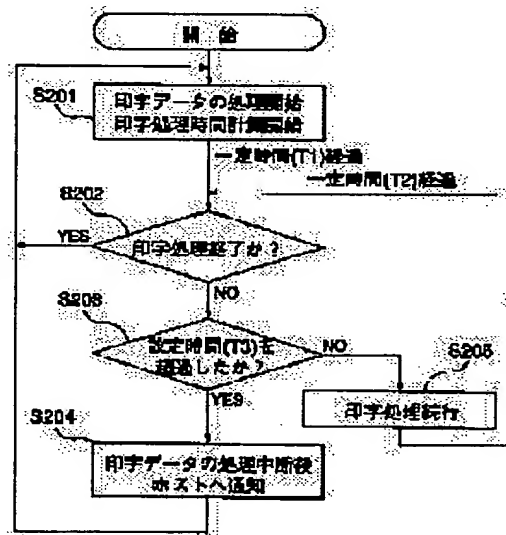
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## (54) OUTPUT DEVICE, INFORMATION PROCESSING SYSTEM AND DATA OUTPUT METHOD

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To efficiently perform a printing processing in the under a network environment even if data to be printed is in process of the reception or in the process of a printing processing.

**SOLUTION:** After the lapse of a fixed time from the starting of a printing data processing (step S203), the printing processing of this printing data is interrupted, regardless of the process of the reception of the printing data or the process of the printing processing. Further, when the printing processing of the printing data is interrupted, the effect that the printing data is canceled is notified to the host computer transmitting the printing data.



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## CLAIMS

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[Claim(s)]

[Claim 1] It is the output unit carry out having had a printing interruption means interrupted printing processing of these printing data irrespective of under reception of the printing data, or printing processing as the description when fixed time amount has passed since initiation of said printing data processing in the output unit which is connected with a host computer through a host interface, carries out printing processing and outputs the printing data from this host computer.

[Claim 2] The output unit according to claim 1 characterized by having an advice means of cancellation to notify the purport by which the printing data was canceled, to the host computer which has transmitted the printing data concerned when printing processing of said printing data is interrupted with said printing interruption means.

[Claim 3] The printing processing section which carries out printing processing of the printing data sent through a host interface from a host computer, In the output unit which has the control panel which performs the actuation and the display about said printing processing, and outputs said data which carried out printing processing, when fixed time amount has passed since initiation of said printing data processing An interruption display-control means to display the information about printing processing interruption of these printing data on said control panel irrespective of under reception of the printing data, or printing processing, The output unit characterized by having an interruption activation means to interrupt printing processing of said printing data after the display control by said interruption display-control means in response to actuation of the printing processing interruption on said control panel.

[Claim 4] In the output unit which is connected with a host computer through a host interface, carries out printing processing and outputs the printing data from this host computer When fixed time amount has passed since initiation of said printing data processing An advice means of interruption information to notify the information about printing processing interruption of said printing data to said host computer irrespective of under reception of the printing data, or printing processing, The output unit characterized by having an interruption activation means to interrupt printing processing of said printing data for the information about said printing processing interruption with the directions from a carrier beam host computer.

[Claim 5] It is the information processing system carry out having had a printing interruption means to by which printing processing of these printing data is interrupted irrespective of under reception of the printing data, or printing processing as the description when fixed time amount passes from initiation of said printing data processing in said output unit in the information processing system equipped with the host computer which generates printing data, and the output unit which are connected with said host computer through a host interface, carry out printing processing and output said printing data.

[Claim 6] Said output unit is information processing system according to claim 5 characterized by having an advice means of cancellation to notify the purport by which the printing data was canceled, to the host computer which has transmitted the printing data concerned when printing processing of said printing data is interrupted with said printing interruption means.

[Claim 7] The output unit which has the control panel which performs the actuation and the

display about the printing processing section which carries out printing processing of the printing data sent through a host interface, and said printing processing, and outputs said data which carried out printing processing, In the information processing system equipped with the host computer which generates said printing data said output unit An interruption display-control means to display the information about printing processing interruption of these printing data on said control panel irrespective of under reception of the printing data, or printing processing when fixed time amount has passed since initiation of said printing data processing, Information processing system characterized by having an interruption activation means to interrupt printing processing of said printing data after the display control by said interruption display-control means in response to actuation of the printing processing interruption on said control panel.

[Claim 8] In the information processing system equipped with the host computer which generates printing data, and the output unit which is connected with said host computer through a host interface, carries out printing processing and outputs said printing data When, as for said output unit, fixed time amount has passed since initiation of said printing data processing, An advice means of interruption information to notify the information about printing processing interruption of said printing data to said host computer irrespective of under reception of the printing data, or printing processing, It has an interruption activation means to interrupt printing processing of said printing data with the interruption directions from said host computer. Said host computer Information processing system characterized for having had an interruption directions sending-out means to send out said interruption directions for the information about said printing processing interruption to said output unit at the time of a carrier beam by things.

[Claim 9] It is the data-output approach of having made printing processing of these printing data interrupted irrespective of under reception of the printing data, or printing processing when fixed time amount had passed since initiation of said printing data processing in the data output approach which receives the printing data from a host computer through a host interface, carries out printing processing and outputs these printing data, and carrying out as the description.

[Claim 10] It is the data output approach according to claim 9 characterized by notifying the purport by which the printing data was canceled to the host computer which has transmitted the printing data concerned when printing processing of said printing data is interrupted.

[Claim 11] In the data output approach which receives the printing data sent through a host interface from a host computer, carries out printing processing and outputs these printing data When fixed time amount has passed since initiation of said printing data processing The data output approach of the output unit which displays the information about printing processing interruption of these printing data on a control panel, and interrupts printing processing of said printing data irrespective of under reception of the printing data, or printing processing in response to actuation of the printing processing interruption on said control panel.

[Claim 12] In the data output approach which receives the printing data sent through a host interface from a host computer, carries out printing processing and outputs these printing data When fixed time amount has passed since initiation of said printing data processing Irrespective of under reception of the printing data, or printing processing, the information about printing processing interruption of said printing data is notified to said host computer. The data output approach characterized by interrupting printing processing of said printing data for the information about said printing processing interruption with the directions from a carrier beam host computer.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the data output approach of output units, such as a printer connected to a host computer through an interface, the information processing system equipped with this output unit, and an output unit.

[0002]

[Description of the Prior Art] Conventionally, the output unit of this kind of field, for example, a printer, communicates between host computers through the host interface section, and it carries out printing processing of the printing data from this host computer. At this time, CPU in a printer analyzes the code data of the character code stored in Program ROM, graphic form formation information, and control information, accesses a font memory based on the character code data stored in page memory according to the processing program, reads corresponding pattern data and carries out pattern expansion at dot pattern memory.

[0003] This dot pattern data is inputted into FIFO (First In First Out: FIFO) memory, and reading appearance is further carried out from this FIFO memory, and it is sent out and printed to the image formation section.

[0004]

[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional example, when two or more users shared an output unit on a network, for example and the specific user occupied the output unit by the data which time amount requires for processing too much, there was a problem of keeping other users who are going to do the activity which can be managed comparatively in a short time waiting for a long time. Moreover, there were also unusual data which time amount requires for printing processing, in such a case, the processing did not finish but the problem of stopping being able to carry out the long duration activity of the output unit as for other users was also in the printing data from a host computer, so that the user itself who transmitted the data did not expect.

[0005] Even if the data which it is going to print compare this invention in view of the above-mentioned conventional trouble and it is [ printing-during data reception ] under processing, it aims at offering the data output approach of the output unit which can perform efficient printing processing in the activity by the network environment, the information processing system equipped with this output unit, and an output unit.

[0006]

[Means for Solving the Problem] In order to attain the above-mentioned object, the output unit which is the 1st invention is connected with a host computer through a host interface, the printing processing of the printing data from this host computer carries out, and when fixed time amount passes from initiation of said printing data processing in the output unit to output, it has a printing interruption means to by which printing processing of these printing data is interrupted, irrespective of under reception of the printing data, or printing processing.

[0007] In said 1st invention, the output unit which is the 2nd invention is equipped with an advice means of cancellation to notify the purport by which the printing data was canceled, to the host computer which has transmitted the printing data concerned, when printing processing of said

printing data is interrupted with said printing interruption means.

[0008] The printing processing section which carries out printing processing of the printing data with which the output unit which is the 3rd invention is sent through a host interface from a host computer, In the output unit which has the control panel which performs the actuation and the display about said printing processing, and outputs said data which carried out printing processing, when fixed time amount has passed since initiation of said printing data processing An interruption display-control means to display the information about printing processing interruption of these printing data on said control panel irrespective of under reception of the printing data, or printing processing, It has an interruption activation means to interrupt printing processing of said printing data after the display control by said interruption display-control means in response to actuation of the printing processing interruption on said control panel.

[0009] In the output unit which the output unit which is the 4th invention is connected with a host computer through a host interface, and carries out printing processing and outputs the printing data from this host computer When fixed time amount has passed since initiation of said printing data processing An advice means of interruption information to notify the information about printing processing interruption of said printing data to said host computer irrespective of under reception of the printing data, or printing processing, It has an interruption activation means to interrupt printing processing of said printing data for the information about said printing processing interruption with the directions from a carrier beam host computer.

[0010] The information processing system which is the 5th invention has a printing interruption means to by which printing processing of these printing data is interrupted, irrespective of under reception of the printing data, or printing processing, when fixed time amount passes the host computer which generates printing data, and the output unit which are connected with said host computer through a host interface, carry out printing processing of said printing data, and output from initiation of said printing data processing in the information processing system which it had.

[0011] In the 5th above-mentioned invention, the information processing system which is the 6th invention is equipped with an advice means of cancellation to notify the purport by which the printing data was canceled, to the host computer which has transmitted the printing data concerned, when said output unit interrupts printing processing of said printing data with said printing interruption means.

[0012] The output unit which the information processing system which is the 7th invention has the control panel which performs the actuation and the display about the printing processing section which carries out printing processing of the printing data sent through a host interface, and said printing processing, and is outputted in said data which carried out printing processing, In the information processing system equipped with the host computer which generates said printing data said output unit An interruption display-control means to display the information about printing processing interruption of these printing data on said control panel irrespective of under reception of the printing data, or printing processing when fixed time amount has passed since initiation of said printing data processing, It has an interruption activation means to interrupt printing processing of said printing data after the display control by said interruption display-control means in response to actuation of the printing processing interruption on said control panel.

[0013] The host computer with which the information processing system which is the 8th invention generates printing data, In the information processing system equipped with the output unit which is connected with said host computer through a host interface, carries out printing processing and outputs said printing data said output unit When fixed time amount has passed since initiation of said printing data processing, irrespective of under reception of the printing data, or printing processing An advice means of interruption information to notify the information about printing processing interruption of said printing data to said host computer, It has an interruption activation means to interrupt printing processing of said printing data with the interruption directions from said host computer. Said host computer It has an interruption directions sending-out means to send out said interruption directions for the information about said printing processing interruption to said output unit at the time of a carrier beam.

[0014] The data-output approach which is the 9th invention carries out printing processing of

these printing data, and when fixed time amount passes from initiation of said printing data processing, printing processing of these printing data is made receive the printing data from a host computer through a host interface, and to be interrupted irrespective of under reception of the printing data, or printing processing in it, in the data output approach to output.

[0015] In the 9th above-mentioned invention, the data output approach which is the 10th invention notifies the purport by which the printing data was canceled to the host computer which has transmitted the printing data concerned, when printing processing of said printing data is interrupted.

[0016] In the data output approach which the data output approach which is the 11th invention receives the printing data sent through a host interface from a host computer, and carries out printing processing and outputs these printing data When fixed time amount has passed since initiation of said printing data processing The information about printing processing interruption of these printing data is displayed on a control panel, and it is made to interrupt printing processing of said printing data irrespective of under reception of the printing data, or printing processing in response to actuation of the printing processing interruption on said control panel.

[0017] In the data output approach which the data output approach which is the 12th invention receives the printing data sent through a host interface from a host computer, and carries out printing processing and outputs these printing data When fixed time amount has passed since initiation of said printing data processing Irrespective of under reception of the printing data, or printing processing, the information about printing processing interruption of said printing data is notified to said host computer. It is made to interrupt printing processing of said printing data for the information about said printing processing interruption with the directions from a carrier beam host computer.

[0018]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing.

[0019] Drawing 1 is the block diagram showing the outline configuration of the output unit concerning one gestalt of operation of this invention. In addition, as an output unit of this operation gestalt, a laser beam printer, the printer by other print method besides an ink jet printer, etc. are mentioned, for example, and the information processing system of this invention is constituted with the host computer connected to this.

[0020] One in drawing is the host interface section for communicating between the output unit of this operation gestalt, and a host computer 20. The signal transmission from an output unit to a host computer 20 is outputted to a host computer 20 through the host interface section 1, and the signal transmission from this host computer 20 to an output unit is inputted into an output unit through the host interface section 1.

[0021] 2 is a communication wire between hosts and is used for the output unit of this operation gestalt, and the communication media between host computers. 3 is page memory and the image-processing information inputted into an output unit as code data through the host interface section 1 is stored in the radical of control of CPU5 at the page memory 3. The page memory 3 has the capacity which can contain the code data for at least 1 page, and stores a character code, graphic form formation information, and control information in the order sent from the host interface section 1. 4 is a font memory which stores the character-pattern data corresponding to a character code.

[0022] CPU5 accesses a font memory 4 based on the character code data stored in the page memory 3 according to processing programs; such as a character code stored in the program ROM 8, and an interpreter which analyzes the code data of graphic form formation information and control information, and forms a dot pattern, reads corresponding pattern data and carries out pattern expansion at the dot pattern memory 6. Moreover, the control program (the program based on the flow chart shown by below-mentioned drawing 2 is also included) is stored in the program ROM 8, and CPU5 controls the whole equipment according to a control program. Moreover, clock signal CK outputted from clock generation circuit 5A is used as a clock signal of CPU5.

[0023] The dot pattern memory 6 can store the dot pattern data by which pattern expansion was

carried out with the processing program for forming the dot pattern stored in the program ROM 8, and can hold the pattern data for a page at least to the code data of the page memory 3. 7 is the random access memory of operating which write various kinds of temporary data, and in case it processes according to the program in which CPU5 is stored in the program RAM 8, when performing processing, it is used.

[0024] 9 is a FIFO memory, inputs dot pattern data and outputs them to the image formation section interface 10. The image formation section interface 10 is sent out to the image formation section 30, in order to print the image data (dot pattern data) from FIFO memory 9.

[0025] 12 is control panels, such as a keyboard, and performs the input for the various configuration of output units, such as setting out of the online/offline state of the host interface section 1 by the operator, of operation. The signal inputted from the control panel 12 is inputted into a data bus 14 or an address bus 15 through the control-panel interface section 11. Here, the various configuration of an output unit of operation can be set up also from a host computer 20 through the control panel 12 installed on the output unit to said host interface section 1.

[0026] 13 is the memory which can write a non-volatile, and saves the various configuration values of the output unit which can be set up also from a host computer 20 through a control panel 12 or the host interface section 1 of operation.

[0027] Next, actuation (the data output approach) of this operation gestalt is explained, referring to the flow chart of drawing 2.

[0028] At step S201, after receiving the code data inputted into the output unit from the host computer 20 through the host interface section 1, initiation of printing processing and measurement of the printing processing time are started. After starting this measurement, it shifts to step S202 from step S201 after fixed time amount (T1) progress. About this time amount (T1), the value (for example, : 10 seconds) beforehand set as the program which carries out this flow chart is sufficient, and the value set as the nonvolatile memory 13 for configuration is also available.

[0029] At step S202, it judges whether printing processing of printing data was completed. In affirmation (YES), in return and negation (NO), it progresses to a data waiting state to step S203 (when it is judged that it is not printing processing termination). (when it is judged that it is printing processing termination)

[0030] At step S203, it judges whether the time amount which has passed by this time since time amount measurement initiation at step S201 exceeded the setup time (T3). (When it is affirmation (YES), and the setup time is exceeded), processing of the data under printing processing is interrupted for step S204, data are canceled, the purport for which printing processing of the data concerned was interrupted through the host interface section 1 to the host computer 20 of the transmitting origin of the data is notified further, and it returns to the following data waiting state. About this time amount (T3), although the value (example: 60 seconds) beforehand set as the program which carries out this flow chart is sufficient, it is more desirable that it is the value set as the nonvolatile memory 13 for configuration.

[0031] When judged as negation (NO) at step S203, it progresses to step S205, printing processing is continued (when it is not over the setup time), and the loop formation which returns to step S202 is further formed after fixed time amount (T2) progress. About this time amount (T2), the value (example: 10 seconds) beforehand set as the program which carries out this flow chart is sufficient, and the value set as the nonvolatile memory 13 for configuration is also available.

[0032] Thus, since it was made to interrupt printing processing of these printing data for this operation gestalt irrespective of under reception of the printing data, or printing processing when fixed time amount had passed since initiation of printing data processing, when two or more users share an output unit on a network, on the occasion of the activity of an output unit, it becomes unnecessary to wait for a long time, and a user can carry out efficient printing processing.

[0033] In addition, this invention is not limited to the operation gestalt of a graphic display, but various deformation is possible for it. If it considers as the modification, there is the following.

[0034] (1) Though processing of the data under printing processing is interrupted for step S204,



it displays on the control panel 12 of an output unit by the purport which wants to interrupt processing of data and printing processing is interrupted for actuation of a control panel 12 instead of canceling data and notifying that, it is not contrary to the meaning of this invention.

[0035] (2) Though it lets the host interface section 1 pass, and notifies whether I may interrupt the data to the host computer of the transmitting origin of data, it lets the host interface section 1 pass by the command from a host computer and printing processing is stopped instead of interrupting processing of the data under printing processing for step S204, and canceling data, it is not contrary to the meaning of this invention.

[0036] (3) Even if it changed and set up the setup time (T3) which determines the upper limit of the above-mentioned printing processing according to data transfer capacity for every port which received data (it is small if it is the port where a transfer rate is high, and a low thing is ), it is not contrary to the meaning of this invention.

[0037]

[Effect of the Invention] As explained in full detail above, according to this invention, also in a network environment with which two or more users share an output unit on a network, a user becomes possible [ becoming unnecessary to wait on the occasion of the activity of an output unit for a long time, and performing efficient printing processing ].

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**TECHNICAL FIELD**

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[Field of the Invention] This invention relates to the data output approach of output units, such as a printer connected to a host computer through an interface, the information processing system equipped with this output unit, and an output unit.

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**PRIOR ART**

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[Description of the Prior Art] Conventionally, the output unit of this kind of field, for example, a printer, communicates between host computers through the host interface section, and it carries out printing processing of the printing data from this host computer. At this time, CPU in a printer analyzes the code data of the character code stored in Program ROM, graphic form formation information, and control information, accesses a font memory based on the character code data stored in page memory according to the processing program, reads corresponding pattern data and carries out pattern expansion at dot pattern memory.

[0003] This dot pattern data is inputted into FIFO (First In First Out: FIFO) memory, and reading appearance is further carried out from this FIFO memory, and it is sent out and printed to the image formation section.

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**EFFECT OF THE INVENTION**

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[Effect of the Invention] As explained in full detail above, according to this invention, also in a network environment with which two or more users share an output unit on a network, a user becomes possible [ becoming unnecessary to wait on the occasion of the activity of an output unit for a long time, and performing efficient printing processing ].

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**TECHNICAL PROBLEM**

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[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional example, when two or more users shared an output unit on a network, for example and the specific user occupied the output unit by the data which time amount requires for processing too much, there was a problem of keeping other users who are going to do the activity which can be managed comparatively in a short time waiting for a long time. Moreover, there were also unusual data which time amount requires for printing processing, in such a case, the processing did not finish but the problem of stopping being able to carry out the long duration activity of the output unit as for other users was also in the printing data from a host computer, so that the user itself who transmitted the data did not expect.

[0005] Even if the data which it is going to print compare this invention in view of the above-mentioned conventional trouble and it is [ printing-during data reception ] under processing, it aims at offering the data output approach of the output unit which can perform efficient printing processing in the activity by the network environment, the information processing system equipped with this output unit, and an output unit.

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**MEANS**

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[Means for Solving the Problem] In order to attain the above-mentioned object, the output unit which is the 1st invention is connected with a host computer through a host interface, the printing processing of the printing data from this host computer carries out, and when fixed time amount passes from initiation of said printing data processing in the output unit to output, it has a printing interruption means to by which printing processing of these printing data is interrupted, irrespective of under reception of the printing data, or printing processing.

[0007] In said 1st invention, the output unit which is the 2nd invention is equipped with an advice means of cancellation to notify the purport by which the printing data was canceled, to the host computer which has transmitted the printing data concerned, when printing processing of said printing data is interrupted with said printing interruption means.

[0008] The printing processing section which carries out printing processing of the printing data with which the output unit which is the 3rd invention is sent through a host interface from a host computer, In the output unit which has the control panel which performs the actuation and the display about said printing processing, and outputs said data which carried out printing processing, when fixed time amount has passed since initiation of said printing data processing An interruption display-control means to display the information about printing processing interruption of these printing data on said control panel irrespective of under reception of the printing data, or printing processing, It has an interruption activation means to interrupt printing processing of said printing data after the display control by said interruption display-control means in response to actuation of the printing processing interruption on said control panel.

[0009] In the output unit which the output unit which is the 4th invention is connected with a host computer through a host interface, and carries out printing processing and outputs the printing data from this host computer When fixed time amount has passed since initiation of said printing data processing An advice means of interruption information to notify the information about printing processing interruption of said printing data to said host computer irrespective of under reception of the printing data, or printing processing, It has an interruption activation means to interrupt printing processing of said printing data for the information about said printing processing interruption with the directions from a carrier beam host computer.

[0010] The information processing system which is the 5th invention has a printing interruption means to by which printing processing of these printing data is interrupted, irrespective of under reception of the printing data, or printing processing, when fixed time amount passes the host computer which generates printing data, and the output unit which are connected with said host computer through a host interface, carry out printing processing of said printing data, and output from initiation of said printing data processing in the information processing system which it had.

[0011] In the 5th above-mentioned invention, the information processing system which is the 6th invention is equipped with an advice means of cancellation to notify the purport by which the printing data was canceled, to the host computer which has transmitted the printing data concerned, when said output unit interrupts printing processing of said printing data with said printing interruption means.

[0012] The output unit which the information processing system which is the 7th invention has the control panel which performs the actuation and the display about the printing processing

section which carries out printing processing of the printing data sent through a host interface, and said printing processing, and is outputted in said data which carried out printing processing. In the information processing system equipped with the host computer which generates said printing data said output unit An interruption display-control means to display the information about printing processing interruption of these printing data on said control panel irrespective of under reception of the printing data, or printing processing when fixed time amount has passed since initiation of said printing data processing. It has an interruption activation means to interrupt printing processing of said printing data after the display control by said interruption display-control means in response to actuation of the printing processing interruption on said control panel.

[0013] The host computer with which the information processing system which is the 8th invention generates printing data, In the information processing system equipped with the output unit which is connected with said host computer through a host interface, carries out printing processing and outputs said printing data said output unit When fixed time amount has passed since initiation of said printing data processing, irrespective of under reception of the printing data, or printing processing An advice means of interruption information to notify the information about printing processing interruption of said printing data to said host computer, It has an interruption activation means to interrupt printing processing of said printing data with the interruption directions from said host computer. Said host computer It has an interruption directions sending-out means to send out said interruption directions for the information about said printing processing interruption to said output unit at the time of a carrier beam.

[0014] The data-output approach which is the 9th invention carries out printing processing of these printing data, and when fixed time amount passes from initiation of said printing data processing, printing processing of these printing data is made receive the printing data from a host computer through a host interface, and to be interrupted irrespective of under reception of the printing data, or printing processing in it, in the data output approach to output.

[0015] In the 9th above-mentioned invention, the data output approach which is the 10th invention notifies the purport by which the printing data was canceled to the host computer which has transmitted the printing data concerned, when printing processing of said printing data is interrupted.

[0016] In the data output approach which the data output approach which is the 11th invention receives the printing data sent through a host interface from a host computer, and carries out printing processing and outputs these printing data When fixed time amount has passed since initiation of said printing data processing The information about printing processing interruption of these printing data is displayed on a control panel, and it is made to interrupt printing processing of said printing data irrespective of under reception of the printing data, or printing processing in response to actuation of the printing processing interruption on said control panel.

[0017] In the data output approach which the data output approach which is the 12th invention receives the printing data sent through a host interface from a host computer, and carries out printing processing and outputs these printing data When fixed time amount has passed since initiation of said printing data processing Irrespective of under reception of the printing data, or printing processing, the information about printing processing interruption of said printing data is notified to said host computer. It is made to interrupt printing processing of said printing data for the information about said printing processing interruption with the directions from a carrier beam host computer.

[0018]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing.

[0019] Drawing 1 is the block diagram showing the outline configuration of the output unit concerning one gestalt of operation of this invention. In addition, as an output unit of this operation gestalt, a laser beam printer, the printer by other print method besides an ink jet printer, etc. are mentioned, for example, and the information processing system of this invention is constituted with the host computer connected to this.

[0020] One in drawing is the host interface section for communicating between the output unit

of this operation gestalt, and a host computer 20. The signal transmission from an output unit to a host computer 20 is outputted to a host computer 20 through the host interface section 1, and the signal transmission from this host computer 20 to an output unit is inputted into an output unit through the host interface section 1.

[0021] 2 is a communication wire between hosts and is used for the output unit of this operation gestalt, and the communication media between host computers. 3 is page memory and the image-processing information inputted into an output unit as code data through the host interface section 1 is stored in the radical of control of CPU5 at the page memory 3. The page memory 3 has the capacity which can contain the code data for at least 1 page, and stores a character code, graphic form formation information, and control information in the order sent from the host interface section 1. 4 is a font memory which stores the character-pattern data corresponding to a character code.

[0022] CPU5 accesses a font memory 4 based on the character code data stored in the page memory 3 according to processing programs, such as a character code stored in the program ROM 8, and an interpreter which analyzes the code data of graphic form formation information and control information, and forms a dot pattern, reads corresponding pattern data and carries out pattern expansion at the dot pattern memory 6. Moreover, the control program (the program based on the flow chart shown by below-mentioned drawing 2 is also included) is stored in the program ROM 8, and CPU5 controls the whole equipment according to a control program. Moreover, clock signal CK outputted from clock generation circuit 5A is used as a clock signal of CPU5.

[0023] The dot pattern memory 6 can store the dot pattern data by which pattern expansion was carried out with the processing program for forming the dot pattern stored in the program ROM 8, and can hold the pattern data for a page at least to the code data of the page memory 3. 7 is the random access memory of operating which write various kinds of temporary data, and in case it processes according to the program in which CPU5 is stored in the program RAM 8, when performing processing, it is used.

[0024] 9 is a FIFO memory, inputs dot pattern data and outputs them to the image formation section interface 10. The image formation section interface 10 is sent out to the image formation section 30, in order to print the image data (dot pattern data) from FIFO memory 9.

[0025] 12 is control panels, such as a keyboard, and performs the input for the various configuration of output units, such as setting out of the online/offline state of the host interface section 1 by the operator, of operation. The signal inputted from the control panel 12 is inputted into a data bus 14 or an address bus 15 through the control-panel interface section 11. Here, the various configuration of an output unit of operation can be set up also from a host computer 20 through the control panel 12 installed on the output unit to said host interface section 1.

[0026] 13 is the memory which can write a non-volatile, and saves the various configuration values of the output unit which can be set up also from a host computer 20 through a control panel 12 or the host interface section 1 of operation.

[0027] Next, actuation (the data output approach) of this operation gestalt is explained, referring to the flow chart of drawing 2.

[0028] At step S201, after receiving the code data inputted into the output unit from the host computer 20 through the host interface section 1, initiation of printing processing and measurement of the printing processing time are started. After starting this measurement, it shifts to step S202 from step S201 after fixed time amount (T1) progress. About this time amount (T1), the value (for example, : 10 seconds) beforehand set as the program which carries out this flow chart is sufficient, and the value set as the nonvolatile memory 13 for configuration is also available.

[0029] At step S202, it judges whether printing processing of printing data was completed. In affirmation (YES), in return and negation (NO), it progresses to a data waiting state to step S203 (when it is judged that it is not printing processing termination). (when it is judged that it is printing processing termination)

[0030] At step S203, it judges whether the time amount which has passed by this time since time amount measurement initiation at step S201 exceeded the setup time (T3). (When it is



affirmation (YES), and the setup time is exceeded), processing of the data under printing processing is interrupted for step S204, data are canceled, the purport for which printing processing of the data concerned was interrupted through the host interface section 1 to the host computer 20 of the transmitting origin of the data is notified further, and it returns to the following data waiting state. About this time amount (T3), although the value (example: 60 seconds) beforehand set as the program which carries out this flow chart is sufficient, it is more desirable that it is the value set as the nonvolatile memory 13 for configuration.

[0031] When judged as negation (NO) at step S203, it progresses to step S205, printing processing is continued (when it is not over the setup time), and the loop formation which returns to step S202 is further formed after fixed time amount (T2) progress. About this time amount (T2), the value (example: 10 seconds) beforehand set as the program which carries out this flow chart is sufficient, and the value set as the nonvolatile memory 13 for configuration is also available.

[0032] Thus, since it was made to interrupt printing processing of these printing data for this operation gestalt irrespective of under reception of the printing data, or printing processing when fixed time amount had passed since initiation of printing data processing, when two or more users share an output unit on a network, on the occasion of the activity of an output unit, it becomes unnecessary to wait for a long time, and a user can carry out efficient printing processing.

[0033] In addition, this invention is not limited to the operation gestalt of a graphic display, but various deformation is possible for it. If it considers as the modification, there is the following.

[0034] (1) Though processing of the data under printing processing is interrupted for step S204, it displays on the control panel 12 of an output unit by the purport which wants to interrupt processing of data and printing processing is interrupted for actuation of a control panel 12 instead of canceling data and notifying that, it is not contrary to the meaning of this invention.

[0035] (2) Though it lets the host interface section 1 pass, and notifies whether I may interrupt the data to the host computer of the transmitting origin of data, it lets the host interface section 1 pass by the command from a host computer and printing processing is stopped instead of interrupting processing of the data under printing processing for step S204, and canceling data, it is not contrary to the meaning of this invention.

[0036] (3) Even if it changed and set up the setup time (T3) which determines the upper limit of the above-mentioned printing processing according to data transfer capacity for every port which received data (it is small if it is the port where a transfer rate is high, and a low thing is ), it is not contrary to the meaning of this invention.

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[Translation done.]

**\* NOTICES \***

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the outline configuration of the output unit concerning one gestalt of operation of this invention.

[Drawing 2] It is the flow chart which shows actuation (the data output approach) of an operation gestalt.

[Description of Notations]

1 Host Interface Section

2 Communication Wire between Hosts

3 Page Memory

4 Font Memory

5 CPU

5A Clock generation circuit

6 Dot Pattern Memory

7 Random Access Memory

8 Program ROM

9 FIFO Memory

10 Image Formation Section Interface

11 Interface Section of Control Panel

12 Control Panels, Such as Keyboard

13 Memory Which Can Write Non-volatile

14 Data Bus

15 Address Bus

20 Host Computer

30 Image Formation Section

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[Translation done.]

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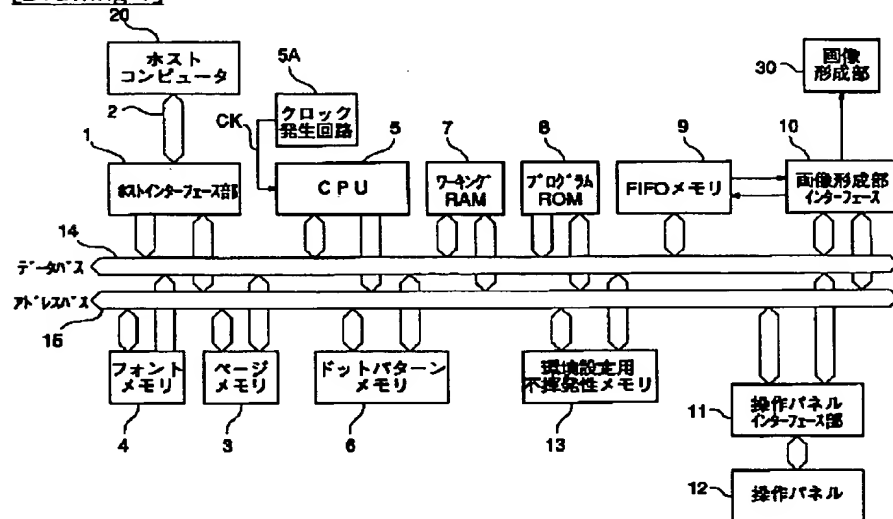
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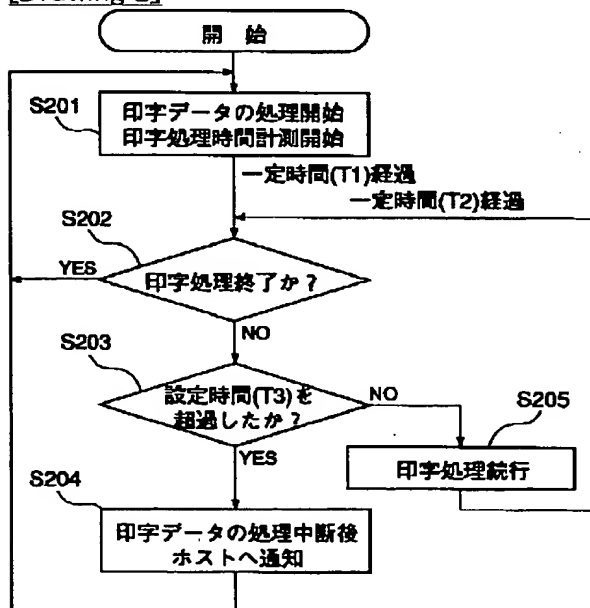
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]

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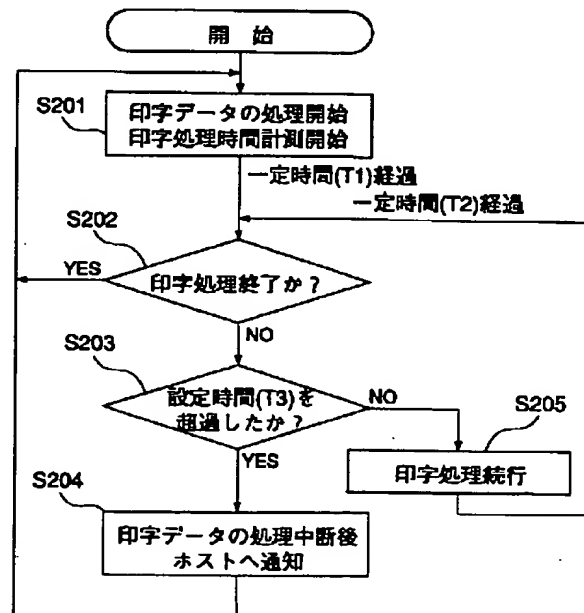
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(54) 【発明の名称】 出力装置、情報処理システム、及びデータ出力方法

(57) 【要約】

【課題】 印字しようとするデータが例えばデータ受信中あるいは印字処理中であっても、ネットワーク環境での使用において効率的な印字処理のできる出力装置を提供する。

【解決手段】 印字データ処理の開始から一定時間が経過したときは(ステップS203)、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断する。さらに、印字データの印字処理を中断したときは、当該印字データを送信してきたホストコンピュータに対して、その印字データがキャンセルされた旨を通知する(ステップS204)。



## 【特許請求の範囲】

【請求項 1】 ホストインターフェースを介してホストコンピュータと接続され、該ホストコンピュータからの印字データを印字処理して出力する出力装置において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断する印字中断手段を備えたことを特徴とする出力装置。

【請求項 2】 前記印字中断手段によって前記印字データの印字処理を中断したときに、当該印字データを送信してきたホストコンピュータに対して、その印字データがキャンセルされた旨を通知するキャンセル通知手段を備えたことを特徴とする請求項 1 記載の出力装置。

【請求項 3】 ホストコンピュータからホストインターフェースを介して送られてくる印字データを印字処理する印字処理部と、前記印字処理に関する操作及び表示を行う操作パネルとを有し、前記印字処理したデータを出力する出力装置において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理中断に関する情報を前記操作パネルに表示する中断表示制御手段と、前記中断表示制御手段による表示制御後に、前記操作パネル上での印字処理中断の操作を受けて前記印字データの印字処理を中断する中断実行手段とを備えたことを特徴とする出力装置。

【請求項 4】 ホストインターフェースを介してホストコンピュータと接続され、該ホストコンピュータからの印字データを印字処理して出力する出力装置において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、前記ホストコンピュータに対して前記印字データの印字処理中断に関する情報を通知する中断情報通知手段と、前記印字処理中断に関する情報を受けたホストコンピュータからの指示により前記印字データの印字処理を中断する中断実行手段とを備えたことを特徴とする出力装置。

【請求項 5】 印字データを生成するホストコンピュータと、ホストインターフェースを介して前記ホストコンピュータと接続され前記印字データを印字処理して出力する出力装置とを備えた情報処理システムにおいて、前記出力装置は、前記印字データ処理の開始から一定時間が経過したときに、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断する印字中断手段を備えたことを特徴とする情報処理システム。

【請求項 6】 前記出力装置は、前記印字中断手段によって前記印字データの印字処理を中断したときに、当該印字データを送信してきたホストコンピュータに対し

て、その印字データがキャンセルされた旨を通知するキャンセル通知手段を備えたことを特徴とする請求項 5 記載の情報処理システム。

【請求項 7】 ホストインターフェースを介して送られてくる印字データを印字処理する印字処理部及び前記印字処理に関する操作及び表示を行う操作パネルを有し前記印字処理したデータを出力する出力装置と、前記印字データを生成するホストコンピュータとを備えた情報処理システムにおいて、

10 前記出力装置は、前記印字データ処理の開始から一定時間が経過したとき、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理中断に関する情報を前記操作パネルに表示する中断表示制御手段と、前記中断表示制御手段による表示制御後に、前記操作パネル上での印字処理中断の操作を受けて前記印字データの印字処理を中断する中断実行手段とを備えたことを特徴とする情報処理システム。

【請求項 8】 印字データを生成するホストコンピュータと、ホストインターフェースを介して前記ホストコンピュータと接続され前記印字データを印字処理して出力する出力装置とを備えた情報処理システムにおいて、前記出力装置は、前記印字データ処理の開始から一定時間が経過したとき、その印字データの受信中あるいは印字処理中にかかわらず、前記ホストコンピュータに対して前記印字データの印字処理中断に関する情報を通知する中断情報通知手段と、前記ホストコンピュータからの中断指示により前記印字データの印字処理を中断する中断実行手段とを備え、

20 前記ホストコンピュータは、前記印字処理中断に関する情報を受けたときに前記出力装置に対して前記中断指示を送出する中断指示送出手段を備えたことを特徴とする情報処理システム。

【請求項 9】 ホストインターフェースを介してホストコンピュータからの印字データを受信し、該印字データを印字処理して出力するデータ出力方法において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断するようにしたことを特徴とするデータ出力方法。

【請求項 10】 前記印字データの印字処理を中断したときは、当該印字データを送信してきたホストコンピュータに対して、その印字データがキャンセルされた旨を通知するようにしたことを特徴とする請求項 9 記載のデータ出力方法。

【請求項 11】 ホストコンピュータからホストインターフェースを介して送られてくる印字データを受信し、該印字データを印字処理して出力するデータ出力方法において、前記印字データ処理の開始から一定時間が経過したとき、

は、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理中断に関する情報を操作パネルに表示し、

前記操作パネル上での印字処理中断の操作を受けて前記印字データの印字処理を中断する出力装置のデータ出力方法。

【請求項12】 ホストコンピュータからホストインターフェースを介して送られてくる印字データを受信し、該印字データを印字処理して出力するデータ出力方法において、

前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、前記ホストコンピュータに対して前記印字データの印字処理中断に関する情報を通知し、

前記印字処理中断に関する情報を受けたホストコンピュータからの指示により前記印字データの印字処理を中断することを特徴とするデータ出力方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、インターフェースを介してホストコンピュータに接続されるプリンタ等の出力装置、この出力装置を備えた情報処理システム、及び出力装置のデータ出力方法に関するものである。

【0002】

【従来の技術】従来、この種の分野の出力装置、例えばプリンタは、ホストインターフェース部を介してホストコンピュータとの間で交信を行い、該ホストコンピュータからの印字データを印字処理する。この時、プリンタ内のCPUは、プログラムROMに格納されている文字コードや図形形成情報、制御情報のコードデータを解析し、処理プログラムに従って、ページメモリに格納されている文字コードデータを基にフォントメモリをアクセスし、対応するパターンデータを読み出してドットパターンメモリにパターン展開する。

【0003】このドットパターンデータは、FIFO(First In First Out:先入れ先出し)メモリに入力され、さらに該FIFOメモリから読み出され、画像形成部へ送出されて印刷される。

【0004】

【発明が解決しようとする課題】しかしながら、上記従来例では、例えば複数のユーザがネットワーク上で出力装置を共有する場合において、処理に時間のかかり過ぎるデータで特定のユーザが出力装置を占有しているときには、比較的短時間で済む作業を行おうとしている他のユーザを長時間待たせてしまうといった問題があった。また、ホストコンピュータからの印字データの中には、そのデータを送信したユーザ自身も予期せぬほど、印字処理に時間のかかる異常なデータもあり、このような場合は、その処理が終わらず他のユーザが出力装置を長時間使用できなくなるといった問題もあった。

【0005】本発明は上記従来の問題点に鑑み、印字しようとするデータが例えばデータ受信中あるいは印字処理中であっても、ネットワーク環境での使用において効率的な印字処理のできる出力装置、この出力装置を備えた情報処理システム、及び出力装置のデータ出力方法を提供することを目的とする。

【0006】

【課題を解決するための手段】上記目的を達成するために、第1の発明である出力装置は、ホストインターフェースを介してホストコンピュータと接続され、該ホストコンピュータからの印字データを印字処理して出力する出力装置において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断する印字中断手段を備えたものである。

【0007】第2の発明である出力装置は、前記第1の発明において、前記印字中断手段によって前記印字データの印字処理を中断したときに、当該印字データを送信してきたホストコンピュータに対して、その印字データがキャンセルされた旨を通知するキャンセル通知手段を備えたものである。

【0008】第3の発明である出力装置は、ホストコンピュータからホストインターフェースを介して送られてくる印字データを印字処理する印字処理部と、前記印字処理に関する操作及び表示を行う操作パネルとを有し、前記印字処理したデータを出力する出力装置において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理中断に関する情報を前記操作パネルに表示する中断表示制御手段と、前記中断表示制御手段による表示制御後に、前記操作パネル上での印字処理中断の操作を受けて前記印字データの印字処理を中断する中断実行手段とを備えたものである。

【0009】第4の発明である出力装置は、ホストインターフェースを介してホストコンピュータと接続され、該ホストコンピュータからの印字データを印字処理して出力する出力装置において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、前記ホストコンピュータに対して前記印字データの印字処理中断に関する情報を通知する中断情報通知手段と、前記印字処理中断に関する情報を受けたホストコンピュータからの指示により前記印字データの印字処理を中断する中断実行手段とを備えたものである。

【0010】第5の発明である情報処理システムは、印字データを生成するホストコンピュータと、ホストインターフェースを介して前記ホストコンピュータと接続され前記印字データを印字処理して出力する出力装置とを備えた情報処理システムにおいて、前記印字データ処理の開始から一定時間が経過したときに、その印字データ

の受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断する印字中断手段を備えたものである。

【0011】第6の発明である情報処理システムは、上記第5の発明において、前記出力装置は、前記印字中断手段によって前記印字データの印字処理を中断したときに、当該印字データを送信してきたホストコンピュータに対して、その印字データがキャンセルされた旨を通知するキャンセル通知手段を備えたものである。

【0012】第7の発明である情報処理システムは、ホストインターフェースを介して送られてくる印字データを印字処理する印字処理部及び前記印字処理に関する操作及び表示を行う操作パネルを有し前記印字処理したデータを出力する出力装置と、前記印字データを生成するホストコンピュータとを備えた情報処理システムにおいて、前記出力装置は、前記印字データ処理の開始から一定時間が経過したとき、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理中断に関する情報を前記操作パネルに表示する中断表示制御手段と、前記中断表示制御手段による表示制御後に、前記操作パネル上での印字処理中断の操作を受けて前記印字データの印字処理を中断する中断実行手段とを備えたものである。

【0013】第8の発明である情報処理システムは、印字データを生成するホストコンピュータと、ホストインターフェースを介して前記ホストコンピュータと接続され前記印字データを印字処理して出力する出力装置とを備えた情報処理システムにおいて、前記出力装置は、前記印字データ処理の開始から一定時間が経過したとき、その印字データの受信中あるいは印字処理中にかかわらず、前記ホストコンピュータに対して前記印字データの印字処理中断に関する情報を通知する中断情報通知手段と、前記ホストコンピュータからの中断指示により前記印字データの印字処理を中断する中断実行手段とを備え、前記ホストコンピュータは、前記印字処理中断に関する情報を受けたときに前記出力装置に対して前記中断指示を送出する中断指示送出手段を備えたものである。

【0014】第9の発明であるデータ出力方法は、ホストインターフェースを介してホストコンピュータからの印字データを受信し、該印字データを印字処理して出力するデータ出力方法において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断するようにしたものである。

【0015】第10の発明であるデータ出力方法は、上記第9の発明において、前記印字データの印字処理を中断したときは、当該印字データを送信してきたホストコンピュータに対して、その印字データがキャンセルされた旨を通知するようにしたものである。

【0016】第11の発明であるデータ出力方法は、ホストコンピュータからホストインターフェースを介して送られてくる印字データを受信し、該印字データを印字処理して出力するデータ出力方法において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理中断に関する情報を操作パネルに表示し、前記操作パネル上での印字処理中断の操作を受けて前記印字データの印字処理を中断するようにしたものである。

【0017】第12の発明であるデータ出力方法は、ホストコンピュータからホストインターフェースを介して送られてくる印字データを受信し、該印字データを印字処理して出力するデータ出力方法において、前記印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、前記ホストコンピュータに対して前記印字データの印字処理中断に関する情報を通知し、前記印字処理中断に関する情報を受けたホストコンピュータからの指示により前記印字データの印字処理を中断するようにしたものである。

【0018】

【発明の実施の形態】以下、図面を参照して本発明の実施の形態を説明する。

【0019】図1は、本発明の実施の一形態に係る出力装置の概略構成を示すブロック図である。なお、本実施形態の出力装置としては、例えばレーザービームプリンタやインクジェットプリンタのほか、他のプリント方式によるプリンタ等が挙げられ、これに接続されるホストコンピュータと共に本発明の情報処理システムを構成する。

【0020】図中1は、本実施形態の出力装置とホストコンピュータ20との間で交信を行うためのホストインターフェース部である。出力装置からホストコンピュータ20への通信信号はホストインターフェース部1を通してホストコンピュータ20へ出力され、該ホストコンピュータ20から出力装置への通信信号はホストインターフェース部1を通して出力装置へ入力される。

【0021】2はホスト間通信線であり、本実施形態の出力装置とホストコンピュータ間での通信媒体に用いられる。3は、ページメモリであり、ホストインターフェース部1を通してコードデータとして出力装置へ入力される画像処理情報は、CPU5の制御の基にページメモリ3に格納される。ページメモリ3は少なくとも1ページ分のコードデータを収納できる容量を有しており、ホストインターフェース部1より送られてくる順に文字コードや図形形成情報、制御情報を格納する。4は、文字コードに対応してその文字パターンデータを格納しているフォントメモリである。

【0022】CPU5は、プログラムROM8に格納さ

れている文字コードや、図形形成情報、制御情報のコードデータを解析し、ドットパターンを形成するインタブリンタ等の処理プログラムに従って、ページメモリ3に格納されている文字コードデータを基にフォントメモリ4をアクセスし、対応するパターンデータを読み出してドットパターンメモリ6にパターン展開する。また、プログラムROM8には制御プログラム（後述の図2で示されるフローチャートに基づくプログラムも含む）が格納されており、CPU5は制御プログラムに従って装置全体の制御を行う。また、クロック発生回路5Aより出力されるクロック信号CKは、CPU5のクロック信号として使用される。

【0023】ドットパターンメモリ6は、プログラムROM8に格納されているドットパターンを形成するための処理プログラムによりパターン展開されたドットパターンデータを格納し、ページメモリ3のコードデータに対して少なくともページ分のパターンデータを収容することができる。7は、一時的な各種のデータを読み書きする作業用のランダムアクセスメモリであり、CPU5がプログラムRAM8に格納されているプログラムに従って処理を行う際に、処理を実行する上で利用する。

【0024】9はFIFOメモリであり、ドットパターンデータを入力し、画像形成部インターフェース10へ出力する。画像形成部インターフェース10は、FIFOメモリ9からの画像データ（ドットパターンデータ）を印刷するために画像形成部30へ送出する。

【0025】12は、キーボード等の操作パネルであり、オペレータによるホストインターフェース部1のオンライン／オフライン状態の設定等の出力装置の各種動作環境設定のための入力を行う。操作パネル12から入力された信号は、操作パネルインターフェース部11を介してデータバス14やアドレスバス15に入力される。ここで、出力装置の各種動作環境設定は、出力装置上に設置された操作パネル12からばかりでなく、前記ホストインターフェース部1を介してホストコンピュータ20からも設定することができる。

【0026】13は、不揮発性の読み書き可能なメモリであり、操作パネル12またはホストインターフェース部1を介してホストコンピュータ20からも設定することができる出力装置の各種動作環境設定値を保存する。

【0027】次に本実施形態の動作（データ出力方法）を図2のフローチャートを参照しつつ説明する。

【0028】ステップS201では、ホストインターフェース部1を通してホストコンピュータ20から出力装置へ入力されたコードデータを受信した後、印字処理の開始及び印字処理時間の測定を開始する。この測定を開始してから一定時間（T1）経過後にステップS201よりステップS202へ移行する。この時間（T1）については、本フローチャートを実施するプログラムに予め設定された値（例えば：10秒）でもよいし、環境設

定用不揮発性メモリ13に設定された値でも構わない。

【0029】ステップS202では、印字データの印字処理が終了したかを判断する。肯定（YES）の場合（印字処理終了であると判断されたとき）にはデータ待ち状態に戻り、否定（NO）の場合（印字処理終了でないと判断されたとき）にはステップS203へ進む。

【0030】ステップS203では、ステップS201での時間計測開始から現時点までに経過した時間が設定時間（T3）を超過したかを判断する。肯定（YES）である場合は（設定時間を超過した時）、ステップS204にて印字処理中のデータの処理を中断させ、データの破棄を行い、さらに、ホストインターフェース部1を通してそのデータの送信元のホストコンピュータ20へ当該データの印字処理が中断された旨の通知を行って次のデータ待ち状態に戻る。この時間（T3）については、本フローチャートを実施するプログラムに予め設定された値（例：60秒）でもよいが、環境設定用不揮発性メモリ13に設定された値であることがより望ましい。

【0031】ステップS203で否定（NO）と判断された場合（設定時間を超過していない時）、ステップS205へ進んで印字処理を続行し、さらに一定時間（T2）経過の後、ステップS202へ戻るループを形成する。この時間（T2）については、本フローチャートを実施するプログラムに予め設定された値（例：10秒）でもよいし、環境設定用不揮発性メモリ13に設定された値でも構わない。

【0032】このように本実施形態では、印字データ処理の開始から一定時間が経過したときは、その印字データの受信中あるいは印字処理中にかかわらず、該印字データの印字処理を中断するようにしたので、複数のユーザがネットワーク上で出力装置を共有する場合においても、ユーザは出力装置の使用に際して長時間待たなくてもよくなり、効率的な印字処理が行える。

【0033】なお、本発明は図示の実施形態に限定されず種々の変形が可能である。その変形例としては例えば次のようなものがある。

【0034】（1）ステップS204にて印字処理中のデータの処理を中断させ、データの破棄を行いその旨を通知する代りに、出力装置の操作パネル12にデータの処理の中断したい旨で表示し、操作パネル12の操作で印字処理を中断させたとしても、本発明の趣旨に反するものではない。

【0035】（2）ステップS204にて印字処理中のデータの処理を中断させ、データの破棄を行う代りに、ホストインターフェース部1を通して、データの送信元のホストコンピュータにそのデータを中断してよいかを通知してホストコンピュータからのコマンドでホストインターフェース部1を通して、印字処理を中止させたとしても、本発明の趣旨に反するものではない。



【0036】(3) データを受信したポートごとに、上記の印字処理の上限を決める設定時間(T3)をデータの転送能力に応じて変えて設定したとしても(転送レートの高いポートなら小さく、低いものは大きく)、本発明の趣旨に反するものではない。

【0037】

【発明の効果】以上詳述したように、本発明によれば、複数のユーザがネットワーク上で出力装置を共有するようなネットワーク環境においても、ユーザは出力装置の使用に際して長時間待たなくてもよくなり、効率的な印字処理を行うことが可能となる。

【図面の簡単な説明】

【図1】本発明の実施の一形態に係る出力装置の概略構成を示すブロック図である。

【図2】実施形態の動作(データ出力方法)を示すフローチャートである。

【符号の説明】

1 ホストインターフェース部

2 ホスト間通信線

3 ページメモリ

4 フォントメモリ

5 CPU

5A クロック発生回路

6 ドットパターンメモリ

7 ランダムアクセスメモリ

8 プログラムROM

9 FIFOメモリ

10 画像形成部インターフェース

11 操作パネルのインターフェース部

12 キーボード等の操作パネル

13 不揮発性の読み書き可能なメモリ

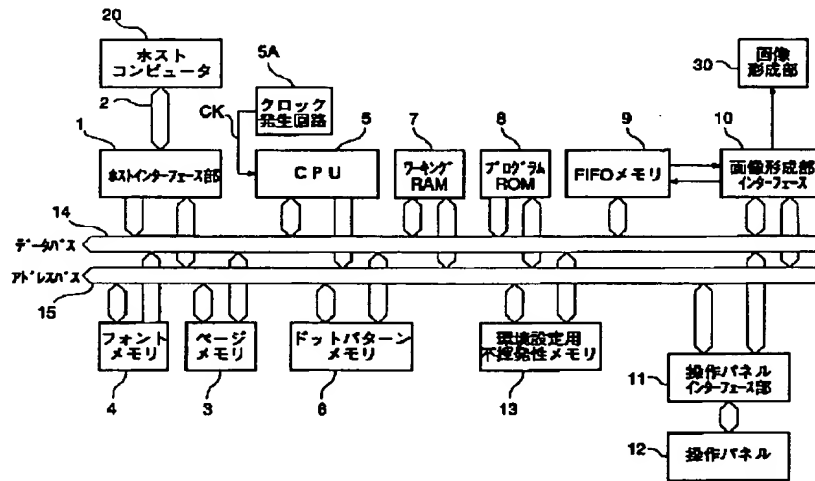
14 データバス

15 アドレスバス

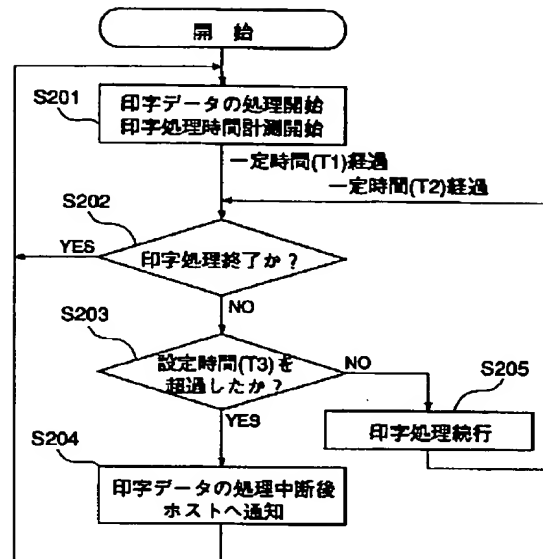
20 ホストコンピュータ

30 画像形成部

【図1】



【図2】



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